

Erp27 Cas9-CKO Strategy

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Reviewer:

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Project Overview

Project Name

Erp27

Project type

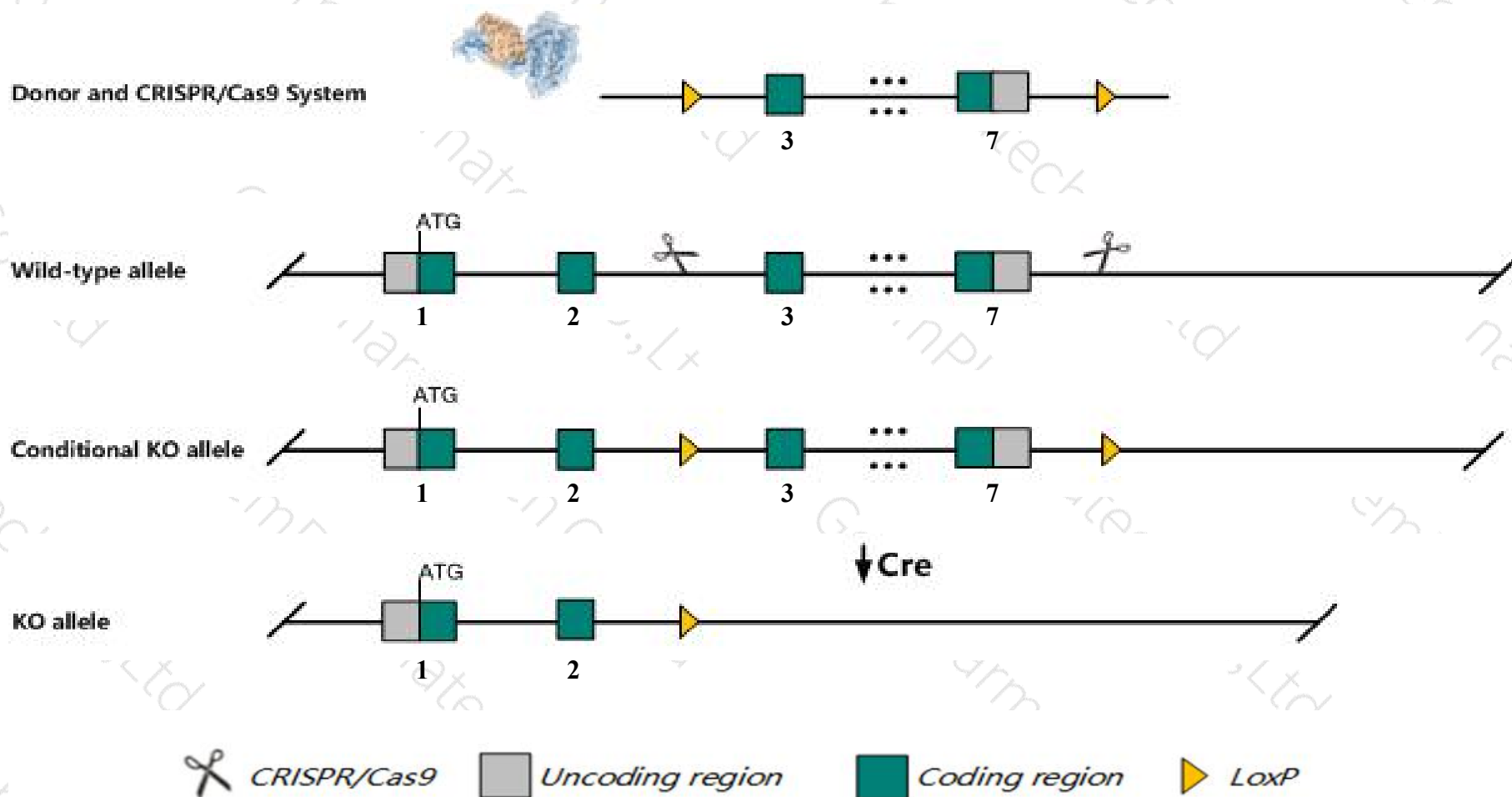
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Erp27* gene. The schematic diagram is as follows:



Technical routes

- The *Erp27* gene has 3 transcripts. According to the structure of *Erp27* gene, exon3-exon7 of *Erp27-201* (ENSMUST00000032343.6) transcript is recommended as the knockout region. The region contains most of the coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Erp27* gene. The brief process is as follows: CRISPR/Cas9 system and Donor were microinjected into the fertilized eggs of C57BL/6JGpt mice. Fertilized eggs were transplanted to obtain positive F0 mice which were confirmed by PCR and sequencing. A stable F1 generation mouse model was obtained by mating positive F0 generation mice with C57BL/6JGpt mice.
- The flox mice will be knocked out after mating with mice expressing Cre recombinase, resulting in the loss of function of the target gene in specific tissues and cell types.

- This strategy may affect the 5-terminal regulation of the *Pde6h* gene.
- The *Erp27* gene is located on the Chr6. If the knockout mice are crossed with other mice strains to obtain double gene positive homozygous mouse offspring, please avoid the two genes on the same chromosome.
- This Strategy is designed based on genetic information in existing databases. Due to the complexity of biological processes, all risk of loxp insertion on gene transcription, RNA splicing and protein translation cannot be predicted at existing technological level.

Gene information (NCBI)

Erp27 endoplasmic reticulum protein 27 [Mus musculus (house mouse)]

Gene ID: 69187, updated on 31-Jan-2019

Summary



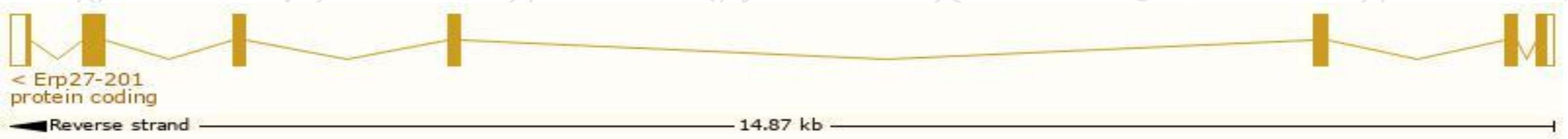
Official Symbol	Erp27 provided by MGI
Official Full Name	endoplasmic reticulum protein 27 provided by MGI
Primary source	MGI:MGI:1916437
See related	Ensembl:ENSMUSG00000030219
Gene type	protein coding
RefSeq status	PROVISIONAL
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	1810033M07Rik, 1810047B09Rik
Expression	Biased expression in spleen adult (RPKM 3.3), small intestine adult (RPKM 2.9) and 4 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

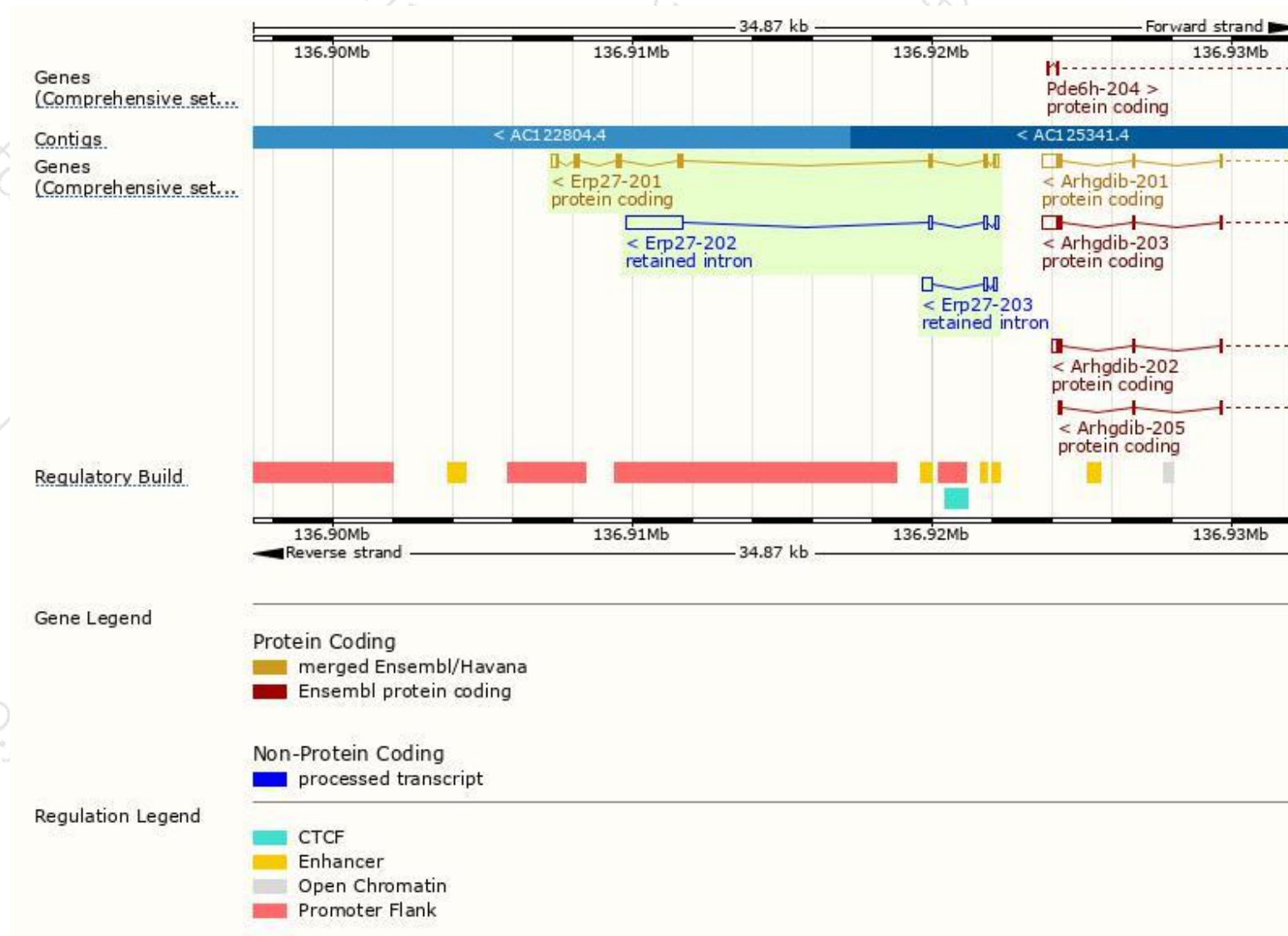
The gene has 3 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Erp27-201	ENSMUST00000032343.6	1029	272aa	Protein coding	CCDS20660	Q9D8U3	TSL:1 GENCODE basic APPRIS P1
Erp27-202	ENSMUST00000162243.7	2174	No protein	Retained intron	-	-	TSL:1
Erp27-203	ENSMUST00000162755.1	557	No protein	Retained intron	-	-	TSL:3

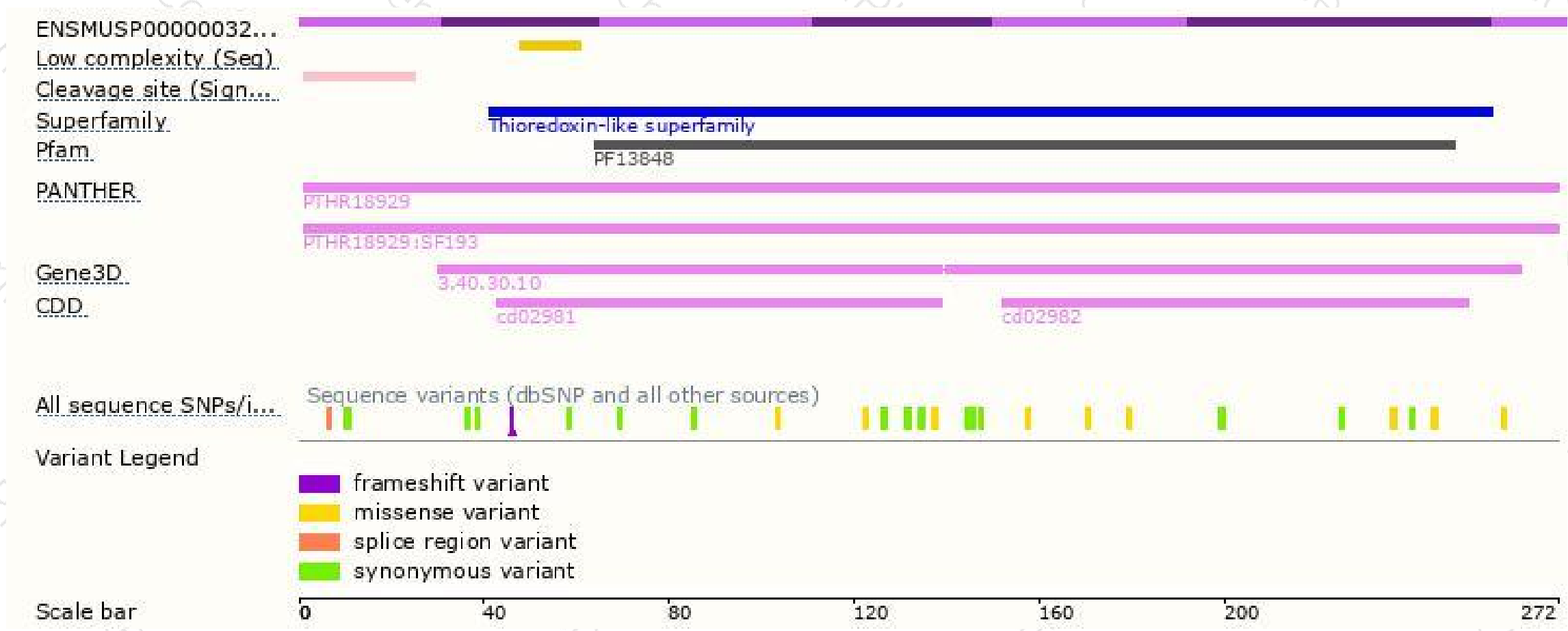
The strategy is based on the design of *Erp27-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



If you have any questions, you are welcome to inquire.

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